

# Failure Mechanisms

## Identifying Mechanisms of Failures

Practical Training Designed & Delivered by Real-World Practitioners



- Becoming a go-to resource in the maintenance and reliability field begins with a thorough understanding of how things fail.
- The manner in which parts fail is foundational to understanding the correct inspection methods and techniques as well as the ability to do RCA.
- Additionally, a deep understanding of how something fails is paramount to selecting the correct prevention, detection, or mitigation strategy as well as the correct frequency for these activities.

### 2-day – Practitioner's Session

#### Core Concepts

- *Types of Failures of Most Common Parts and Components*
- *Specific (Chemical, Electrical, Mechanical, and Process) Failure Mechanisms*
- *Identification, Prevention, and Mitigation Techniques*
- *Failure Profiles for Common Component Types*



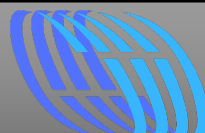
### What will you learn?

- Understanding what failure modes are and how to identify them
- The difference between a failure mode, failure mechanism, and a failure effect...and why these differences are pertinent
- The most typical **mechanical** mechanisms for the most typical parts of common industrial asset types and component types
- The most typical **electrical** mechanisms for the most typical parts of common industrial asset types and component types
- The most typical **chemical** mechanisms for the most typical parts of common industrial asset types and component types

### Who is this class for?

- Maintenance Managers
- Reliability Engineers
- Maintenance Engineers
- Operational Leaders
- Maintenance Supervisors
- Operational Supervisors
- Plant Managers
- Reliability Leaders
- Maintenance Planners
- Plant/Facility Engineers

Email us today to begin your registration:  
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EVIDENCE-BASED RELIABILITY

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### Class Agenda

- Failure Mechanisms, Modes, & Effects
- Bearing & Gear Failures
- Lip & Labyrinth Seals
- Elastomeric, Grid, Disc, and Jaw Couplings
- Motor Winding Insulation
- Motor Rotors
- Pump Impellers & Volutes
- Compressor Screws & Rotors
- Transformers, Breakers & Starters
- Pipes, Tanks, & Pressure Vessels
- Capstone Exercise #1
- Capstone Exercise #2

- Real World Examples
- Breakout Exercises

- Case Histories
- Group Discussions



*Plant Reliability is the foundation on which Asset Management is built. The best developed Asset Strategy will prove ineffective if your plant behaves in an unpredictable manner.*

*Unforeseen failures foster a self-reinforcing reactive maintenance culture.*



*An understanding of reliability tools & techniques will help break the reactive maintenance cycle.*

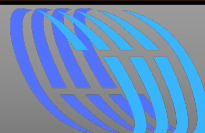


### Meet your Instructor – Andy Page, Ph.D.

- Andy is a Certified Maintenance & Reliability Professional (CMRP) with over 30+ years of Physical Asset Management & Operational Field experience in multi-technique Condition Monitoring, Maintenance Management, Process Reliability & Improvement, Defect Elimination & Facilitation of Staff Training, Development & Mentoring.
- He is recognized internationally as an expert in predictive maintenance and reliability. He has spoken at maintenance conferences in several countries, and regularly leads clients through successful implementations of maintenance and reliability improvements.



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